

Memorandum

To: Dr. Derbyshire

From : J. Lederberg

Just a quick note on "Science in Space."

I would suggest that the organizational and political material on pages 7 through 24 should be transposed to the end of the volume. While these considerations must loom very large in the minds of the members of the Board, I don't believe that they are calculated to engage the interest of working scientists. They should certainly be in the volume to answer questions that will inevitably arise if a reader's interest is stimulated. I will assume that you are keeping in mind bringing this material up to date with mention of, for example, the Bioastronautics Committee.

Reading through the draft, I noticed several references to the high temperature of Venus, for example page 17, chapter 4; page 6 of that chapter and I think elsewhere. I have more recently heard considerable skepticism as to the certainty of radio measurements of the temperature of Venus and I wonder if the members of the Board might not prefer to be more cautious. The high temperatures that have been proposed will, of course, preclude the maintenance of familiar forms of life there.

I found page 6 of section 3 of chapter 2 somewhat confusing until I read "It moves northward during daylight" to refer to the sum of several traverses. On page 7, "polar satellite would always view the earth at nearly the same local time," would be clear, on the same grounds, if it read, "a given meridional zone of the earth."

At the foot of page 18, chapter 4 is a remark that on Mars "life of the active forms found on the earth is most improbable." I don't think I could go quite so far on the basis of the a priori argument since other oxidants besides oxygen itself might be available. To illustrate this point in a general way, the rocket that lands the Martian probe may carry a propellant other than oxygen.

Is there a typographical error on page 23? I would have thought that a low radius for Mars would imply a high density and therefore a possible core.

I'm not sure that I can improve greatly on Dr. Hartline's contribution but I am making an effort to expand the section on the detection of extraterrestrial life.